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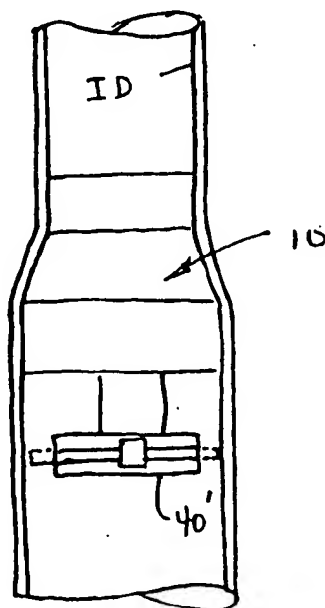
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European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,

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(54) Title: RESIDUAL STRESSES IN EXPANDABLE TUBULAR CASING



(57) Abstract: An elongated section of steel tubing (30) has an outer circumferential surface and an inner circumferential surface defining an elongated axial passage through the tubing. An expansion mandrel (10) is moved through the tubing for radially expanding the tubing. An impact member (40) is provided for travel through the length of the axial passage. A plurality of movable impactors (42) are mounted to extend from the impact member. The impactors are driven for repeated contact with the inner circumferential surface as the impact member is moved through the tubing subsequent to the expansion mandrel for contacting the expanded inner circumferential surface along the entire length of the axial passage. Movement of the impactors is ultrasonic.

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— with international search report

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/25742

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : B21C 37/30

US CL : 72/370.06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 72/370.06, 370.08, 53, 75

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| X | US 2,929,741 A (STROCK et al.) 05 January 1960, (05-01-1960), whole doc. | 23 |
| — | | 15-19 |
| Y | | |
| X | US 4,491,001 A (YOSHIDA et al.) 01 January 1985 (01-01-1985), whole doc. | 1-3, 5-7, 21, 22 |
| — | | 4, 8, 15-19 |
| Y | | |
| Y | US 6,343,495 B1 (CHEPPE et al.) 05 February 2002 (05-02-2002), whole doc. | 4, 8 |

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☐ See patent family annex.

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